

Applicants: Klaus LORENZ, et al.

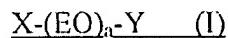
Response to Office Action mailed: March 20, 2009

Response Filed: June 18, 2009

## II. AMENDMENTS TO THE CLAIMS

The below listing of claims will replace all prior versions, and listings, of claims in the present application:

1. (Currently Amended) A defoaming agent for cementitious compositions comprising a mixture of at least one polyethylene oxide derivative and at least one nonionic defoaming agent, wherein the polyethylene oxide derivative has at one end a hydrophobic group with at least one of a branched structure and an unsaturated bond, and at the other end an anionic group, wherein the ~~unsaturated bond is optionally a double bond~~ polyethylene oxide derivative is a compound expressed by formula I:



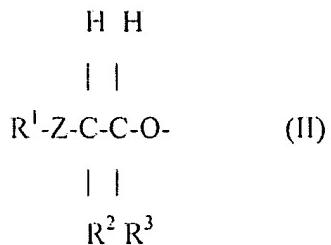
wherein X is a hydrophobic group comprising a branched structure and an unsaturated bond; wherein the unsaturated bond is a double bond; Y is an anionic group; EO is -CH<sub>2</sub>CH<sub>2</sub>O- and a is an integer from 6 to 100.

- 2-3. (Cancelled)
4. (Currently Amended) The defoaming agent according to claim [[3]] 1 wherein a is an integer from 15 to 60.
5. (Currently Amended) The defoaming agent according to claim 1, wherein the hydrophobic group ~~comprising at least one of a branched structure and an unsaturated bond~~ is expressed by formula II:

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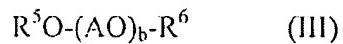
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wherein Z is O or an amine; R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are each independently alkyl or phenyl, naphthyl, alkenyl, alkylene oxide with 2 to 4 carbon atoms or any derivatives thereof, and R<sup>2</sup> and R<sup>3</sup> may also be each independently H, with the proviso that R<sup>1</sup> is not alkyl when R<sup>2</sup> and R<sup>3</sup> are both H.

6. (Previously Presented) The defoaming agent according to claim 1, wherein the anionic group is -SO<sub>3</sub>M, -(CH<sub>2</sub>CH<sub>2</sub>)OSO<sub>3</sub>M, -R<sup>4</sup>COOM (wherein R<sup>4</sup> is -C<sub>m</sub>H<sub>2m</sub>- (in which m is an integer 10 > m > 0) or a phenyl group), -PO<sub>3</sub>M or -CO(CH<sub>2</sub>)<sub>n</sub>COOM (wherein M is Na salt, K salt, Ca salt, Mg salt, NH<sub>4</sub> salt or H, n is 2 or 3);
7. (Previously Presented) The defoaming agent according to claim 1 wherein the nonionic defoaming agent is expressed by formula III:



wherein R<sup>5</sup> and R<sup>6</sup> are each independently an aliphatic hydrocarbon with 10 to 25 carbon atoms, an alkyl group with 1 to 5 carbon atoms or H; AO is a block polymer and/or a random polymer constituted of alkylene oxide with 2 to 3 carbon atoms and b is an integer from 5 to 500.

8. (Previously Presented) The defoaming agent according to claim 1 wherein the polyethylene oxide derivative and the nonionic defoaming agent are at a ratio in the range of 20:80 to 60:40 (wt%).

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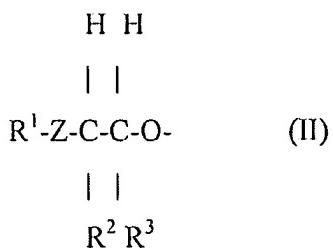
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9. (Original) The defoaming agent according to claim 7, wherein the nonionic defoaming agent, when converted to polyethylene glycol, has a weight average molecular weight in the range from 300 to 30,000 and the weight ratio of the ethylene oxide in said molecular weight is in the range of 5 to 80%.
10. (Currently Amended) A water-reducing composition comprising a blend of a polycarboxylate-type high performance air-entraining (AE) water-reducing agent and a defoaming agent according to claim 1 for cementitious compositions comprising a mixture of at least one polyethylene oxide derivative and at least one nonionic defoaming agent, wherein the polyethylene oxide derivative has at one end a hydrophobic group with at least one of a branched structure and an unsaturated bond, and at the other end an anionic group, wherein the unsaturated bond is optionally a double bond.
11. (Previously Presented) A method of defoaming a cementitious composition by the addition to the composition of a defoaming agent according to claim 1.
12. (Previously Presented) The defoaming agent of claim 6 wherein m is 1 or 2.
13. (Currently Amended) The A defoaming agent according to claim 3 for cementitious compositions comprising a mixture of at least one polyethylene oxide derivative and at least one nonionic defoaming agent, wherein the polyethylene oxide derivative has at one end a hydrophobic group with at least one of a branched structure and an unsaturated bond, and at the other end an anionic group, wherein the unsaturated bond is optionally a double bond, wherein the hydrophobic group comprising at least one of a branched structure and an unsaturated bond is expressed by formula II:

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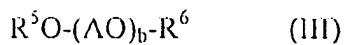
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wherein Z is O or an amine; R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are each independently alkyl or phenyl, naphthyl, alkenyl, alkylene oxide with 2 to 4 carbon atoms or any derivatives thereof, and R<sup>2</sup> and R<sup>3</sup> may also be each independently H, with the proviso that R<sup>1</sup> is not alkyl when R<sup>2</sup> and R<sup>3</sup> are both H.

14. (Currently Amended) The defoaming agent according to claim [[3]] 13, wherein the anionic group is -SO<sub>3</sub>M, -(CH<sub>2</sub>CH<sub>2</sub>)OSO<sub>3</sub>M, -R<sup>4</sup>COOM (wherein R<sup>4</sup> is -C<sub>m</sub>H<sub>2m</sub>- (in which m is an integer 10 > m > 0) or a phenyl group), -PO<sub>3</sub>M or -CO(CH<sub>2</sub>)<sub>n</sub>COOM (wherein M is Na salt, K salt, Ca salt, Mg salt, NH<sub>4</sub> salt or H, n is 2 or 3).
15. (Previously Presented) The defoaming agent of claim 14 wherein m is 1 or 2.
16. (Currently Amended) The defoaming agent according to claim [[3]] 13, wherein the nonionic defoaming agent is expressed by formula III:



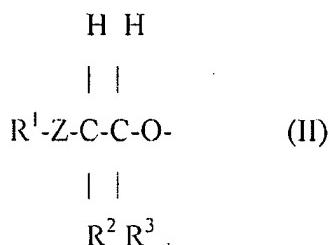
wherein R<sup>5</sup> and R<sup>6</sup> are each independently an aliphatic hydrocarbon with 10 to 25 carbon atoms, an alkyl group with 1 to 5 carbon atoms or H; AO is a block polymer and/or a random polymer constituted of alkylene oxide with 2 to 3 carbon atoms and b is an integer from 5 to 500.

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17. (Currently Amended) A water-reducing composition comprising a blend of a polycarboxylate-type high performance air-entraining (AE) water-reducing agent and a defoaming agent according to claim [[3]] 13.
18. (Currently Amended) A method of defoaming a cementitious composition by the addition to the composition of a defoaming agent according to claim [[3]] 13.
19. (Currently Amended) The defoaming agent according to claim 4, wherein the hydrophobic group ~~comprising at least one of a branched structure and an unsaturated bond~~ is expressed by formula II:



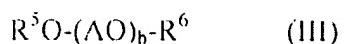
wherein Z is O or an amine; R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are each independently alkyl or phenyl, naphthyl, alkenyl, alkylene oxide with 2 to 4 carbon atoms or any derivatives thereof, and R<sup>2</sup> and R<sup>3</sup> may also be each independently H, with the proviso that R<sup>1</sup> is not alkyl when R<sup>2</sup> and R<sup>3</sup> are both H.

20. (Previously Presented) The defoaming agent according to claim 4, wherein the anionic group is -SO<sub>3</sub>M, -(CH<sub>2</sub>CH<sub>2</sub>)OSO<sub>3</sub>M, -R<sup>4</sup>COOM (wherein R<sup>4</sup> is -C<sub>m</sub>H<sub>2m-</sub> (in which m is an integer 10 > m > 0) or a phenyl group), -PO<sub>3</sub>M or -CO(CH<sub>2</sub>)<sub>n</sub>COOM (wherein M is Na salt, K salt, Ca salt, Mg salt, NH<sub>4</sub> salt or H, n is 2 or 3).

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21. (Previously Presented) The defoaming agent according to claim 4 wherein the nonionic defoaming agent is expressed by formula III:



wherein R<sup>5</sup> and R<sup>6</sup> are each independently an aliphatic hydrocarbon with 10 to 25 carbon atoms, an alkyl group with 1 to 5 carbon atoms or H; AO is a block polymer and/or a random polymer constituted of alkylene oxide with 2 to 3 carbon atoms and b is an integer from 5 to 500.

22. (New) A water-reducing composition comprising a blend of a polycarboxylate-type high performance air-entraining (AE) water-reducing agent and a defoaming agent according to claim 1.